

Remarks

Receipt is acknowledged of the Office Action mailed April 26, 2006. Applicant respectfully requests reconsideration of the present application in view of the foregoing amendment, and the remarks which follow. No new matter is added with the amendments, which are fully supported by the specification.

Claims 1, 6, 10, 11, and 13 have been amended. Claims 1-2, 6-19, and 21-23 are pending in the application.

Applicant thanks the Examiner for acknowledging the claim for foreign priority. In addition, Applicant thanks the Examiner for the indication that claims 8-11, 13 and 15-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections under 35 USC § 102(e)

Claims 1-2, 6-7, 12, 14, 19, and 21-23 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,590,822 to Hwang et al, hereafter Hwang. Applicant respectfully traverses this rejection for at least the following reasons.

Amended independent claim 1 now recites, *inter alia*, "a row address strobe generator for generating a row active signal for selectively activating *a quarter or a half of a plurality of the banks* and *a quarter or a half of the activated banks* depending on states of the plurality of control signals when a refresh operation signal is operated." (emphasis added). Applicant respectfully submits that Hwang fails to teach or suggest this recited limitation.

On page 3 of the Office Action, the examiner states that Hwang discloses “a partial array self-refresh decoder [abstract, column 2, lines 50-57] for generating a plurality of control signals for performing a partial array self-refresh operation in response to the mode register set signal, the self-refresh signal, and the internal address [a mode register setting signal PMRS is at a logic high level . . . (column 8, lines 27-48); column 3, lines 13-31];” Absent from this disclosure is any teaching that the control signals from the partial array self-refresh decoder are used to selectively active a quarter or a half of a plurality of the banks and a quarter or a half of the activated banks.

On pages 3 and 4 of the Office Action, the examiner states that Hwang discloses “a row address strobe generator [RAS, figure 4; column 7, lines 60-67] for controlling a row active signal for selectively activating one or more banks or a certain region in a selected signal bank [1/2, 1/4, 1/8, or 1/16 of a selected memory bank (column 2, lines 50-57)] depending on states of the plurality of control signals when a refresh operation signal is activated [column 3, lines 5-12].” Absent from this disclosure is any teaching that the row address strobe generator generates “a row active signal for selectively activating a quarter or a half of a plurality of the banks and a quarter or a half of the activated banks depending on states of the plurality of control signals when a refresh operation signal is activated.”

In addition, as recited in claim 6, the present invention provides a partial array self-refresh (PASR) decoder comprising an extended mode register for decoding a bank selection address. As depicted in Fig. 3, the PASR decoder [40] generates a plurality of bank selection signals [PASR_BK0, PASR_BK1, PASR_BK23] according to predetermined codes by using an extended mode register set in order to perform a self-refresh operation for some of the banks among a plurality of banks. In contrast, Hwang’s bank selection decoder [Fig. 2: 213] performs a PASR operation by controlling the generation of row addresses by a row address counter during a self-refresh operation [col. 2, lines 59-61]. Thus, the present invention provides a different bank selection technique.

Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claim 1 under 35 U.S.C. §102(e) as being anticipated by Hwang. Moreover, Applicant submits that since claims 2, 6, 7, 14, 19, and 21-23 depend, either directly or indirectly, from amended claim 1 which is now believed to be in condition for allowance, these claims are also allowable for the foregoing reasons. Accordingly, Applicant respectfully requests withdrawal of the rejections of claims 2, 6, 7, 14, 19, and 21-23. Further, since claim 1 is now in allowable form, Applicant requests withdrawal of the objections to claims 8-13 and 15-18.

CONCLUSION

In view of the above amendment and remarks, applicant respectfully requests that all objections and rejections be withdrawn and that a notice of allowance be forthcoming. The Examiner is invited to contact the undersigned attorney for applicant at 202-912-2160 for any reason related to the advancement of this case.

Respectfully submitted,

Date: July 26, 2006

Heller Ehrman LLP
1717 Rhode Island Avenue, N.W.
Washington, D.C. 20036
Telephone: (202) 912-2000
Facsimile: (202) 912-2020



Johnny A. Kumar
Attorney for Applicant
Reg. No.: 34,649

Customer No. 26633